II. Amendments to the Claims

This listing of claims replaces without prejudice all prior versions and listings of claims in the application:

Listing of Claims:

1. (Currently Amended) A fluid radiation treatment system ~~fluid mixing device for mixing a fluid~~ having a direction of fluid flow, the system ~~device~~ comprising:

at least one mixing element to create at least one vortex adjacent to a surface downstream of the mixing element, the mixing element having a first normal located at a centroid thereof, and

the surface having a second normal which intersects the first normal at the centroid,

wherein the first normal, the second normal, and the direction of fluid flow are in a non-planar relationship.

2. (Currently Amended) The fluid radiation treatment system ~~fluid mixing device~~ defined in claim 1, wherein the surface comprises a leading edge.

3. (Currently Amended) The fluid radiation treatment system ~~fluid mixing device~~ defined in claim 1, wherein the surface comprises a trailing edge.

4. (Currently Amended) The fluid radiation treatment system ~~fluid mixing device~~ defined in claim 1, wherein the surface comprises a leading edge and a trailing edge.

5. (Currently Amended) The fluid radiation treatment system ~~fluid mixing device~~ defined in claim 4, wherein the leading edge and trailing edge are substantially parallel.

6. (Currently Amended) The fluid radiation treatment system ~~fluid mixing device~~ defined in claim 5, wherein the leading edge and the trailing edge are interconnected by a wing tip edge.

7. (Currently Amended) The fluid radiation treatment system ~~fluid mixing device~~ defined in claim 6, wherein the wing tip edge comprises an edge substantially parallel to the direction of fluid flow.

8. (Currently Amended) The fluid radiation treatment system ~~fluid mixing device~~ defined in claim 4, wherein the a leading edge and a trailing edge are non-parallel.

9. (Currently Amended) The fluid radiation treatment system ~~fluid mixing device~~ defined in claim 8, wherein the one of leading edge and the trailing edge is substantially perpendicular to the direction of fluid flow.

10. (Currently Amended) The fluid radiation treatment system ~~fluid mixing device~~ defined in claim 2, wherein leading edge comprises a substantially curved edge.

11. (Currently Amended) The fluid radiation treatment system ~~fluid mixing device~~ defined in claim 2, wherein leading edge comprises a substantially straight edge.

12. (Currently Amended) The fluid radiation treatment system ~~fluid mixing device~~ defined in claim 2, wherein trailing edge comprises a substantially curved edge.

13. (Currently Amended) The fluid radiation treatment system ~~fluid mixing device~~ in claim 2, wherein trailing edge comprises a substantially straight edge.

14. (Currently Amended) The fluid radiation treatment system ~~fluid mixing device~~ defined in claim 1, wherein the mixing element comprises a planar surface.

15. (Currently Amended) The fluid radiation treatment system ~~fluid mixing device~~ defined in claim 1, wherein the mixing element comprises a curved surface.

16. (Currently Amended) The fluid radiation treatment system ~~fluid mixing device~~ defined in claim 1, wherein an the mixing element comprises an apex portion.

17. (Currently Amended) The fluid radiation treatment system ~~fluid mixing device~~ defined in claim 16, wherein the apex portion is oriented to point substantially upstream with respect to the direction of fluid flow.

18. (Currently Amended) The fluid radiation treatment system ~~fluid mixing device~~ defined in claim 16, wherein the apex portion is oriented to point substantially downstream with respect to the direction of fluid flow.

19. (Currently Amended) The fluid radiation treatment system ~~fluid mixing device~~ defined in claim 1, comprising a first mixing element and a second element.

20. (Currently Amended) The fluid radiation treatment system ~~fluid mixing device~~ defined in claim 19, wherein the first mixing element and the second mixing element are substantially mirror images of one another ~~about the first plane or the second plane~~.

21. (Currently Amended) The fluid radiation treatment system ~~fluid mixing device~~ defined in claim 19, wherein the first mixing element and the second mixing element are substantially non-mirror images of one another about the first plane or the second plane.

22. (Currently Amended) The fluid radiation treatment system ~~fluid mixing device~~ defined in claim 19, wherein the first mixing element comprises ~~comprising~~ a first leading edge and a first trailing edge.

23. (Currently Amended) The fluid radiation treatment system ~~fluid mixing device~~ defined in claim 19, wherein the second mixing element comprises ~~comprising~~ a second leading edge and a second trailing edge.

24. (Currently Amended) The fluid radiation treatment system ~~fluid mixing device~~ defined in claim 19, wherein the first mixing element comprises ~~comprising~~ a first leading edge and a first trailing edge, and the second mixing element comprises ~~comprising~~ a second leading edge and a second trailing edge.

25. (Currently Amended) The fluid radiation treatment system ~~fluid mixing device~~ defined in claim 24 ~~22~~, wherein at least one of the first leading edge and the second leading edge comprises ~~comprise~~ a substantially straight edge.

26. (Currently Amended) The fluid radiation treatment system ~~fluid mixing device~~ defined in claim 24 ~~22~~, wherein both of the first leading edge and the second leading edge comprise a substantially straight edge.

27. (Currently Amended) The fluid radiation treatment system ~~fluid mixing device~~ defined in claim 22, wherein at least one of the first leading edge and the second leading edge comprises ~~comprise~~ a substantially curved edge.

28. (Currently Amended) The fluid radiation treatment system ~~fluid mixing device~~ defined in claim 22, wherein both of the first leading edge and the second leading edge comprise a substantially curved edge.

29. (Currently Amended) The fluid radiation treatment system ~~fluid mixing device~~ defined in claim 22, wherein the first trailing edge and the second trailing edge are integral such that the first mixing element and the second mixing element are interconnected.

30. (Currently Amended) The fluid radiation treatment system ~~fluid mixing device~~ defined in claim 24 ~~22~~, wherein the first trailing edge and the second trailing edge are in spaced relation to define an opening between the first mixing element and the second mixing element.

31. (Currently Amended) The fluid radiation treatment system ~~fluid mixing device~~ defined in claim 22, wherein the first leading edge and the second leading edge are integral such that the first mixing element and the second mixing element are interconnected.

32. (Currently Amended) The fluid radiation treatment system ~~fluid mixing device~~ defined in claim 19,

wherein the first mixing element comprises a first apex portion.

33. (Currently Amended) The fluid radiation treatment system ~~fluid mixing device~~ defined in claim 19, wherein the second mixing element comprises a second apex portion.

34. (Currently Amended) The fluid radiation treatment system ~~fluid mixing device~~ defined in claim 19, wherein the first mixing element comprises a first apex portion and the second mixing element comprises a second apex portion.

35. (Currently Amended) The fluid radiation treatment system ~~fluid mixing device~~ defined in claim 32, wherein the first apex portion is oriented substantially downstream with respect to the direction of fluid flow.

36. (Currently Amended) The fluid radiation treatment system ~~fluid mixing device~~ defined in claim 32, wherein the second apex portion is oriented substantially downstream with respect to the direction of fluid flow.

37. (Currently Amended) The fluid radiation treatment system ~~fluid mixing device~~ defined in claim 32, wherein the first apex portion and the second apex portion are oriented substantially downstream with respect to the direction of fluid flow.

38. (Currently Amended) The fluid radiation treatment system ~~fluid mixing device~~ defined in claim 32, wherein the first apex portion is oriented substantially upstream with respect to the direction of fluid flow.

39. (Currently Amended) The fluid radiation treatment system ~~fluid mixing device~~ defined in claim 32, wherein the second apex portion is oriented substantially upstream with respect to the direction of fluid flow.

40. (Currently Amended) The fluid radiation treatment system ~~fluid mixing device~~ defined in claim 32, wherein the first apex portion and the second apex portion are oriented substantially upstream with respect to the direction of fluid flow.

41. (Currently Amended) The fluid radiation treatment system ~~fluid mixing device~~ defined in claim 1, wherein the at least one mixing element comprises a plane.

42. (Currently Amended) The fluid radiation treatment system ~~fluid mixing device~~ defined in claim 1, wherein the at least one mixing element comprises a wedge.

43. (Currently Amended) A fluid radiation treatment system ~~fluid mixing device~~ comprising:

at least one mixing element for mixing a flow of fluid having a direction of fluid flow, the at least one mixing element comprising a surface having a first normal which is:

(i) acutely angled with respect to a first plane having a second normal substantially perpendicular to the direction of fluid flow; and

(ii) acutely angled with respect to a second plane parallel to the direction of fluid flow and orthogonal to the first plane.

44. (Currently Amended) A fluid radiation treatment system ~~fluid mixing device~~ comprising:

at least one mixing element for mixing a flow of fluid having a direction of fluid flow, the at least one mixing element comprising:

a surface having a normal which is acutely angled with respect to each of two planes which are

orthogonal to one another, each plane intersecting on a line substantially parallel to the direction of fluid flow.

45. (Currently Amended) A fluid radiation treatment system ~~fluid mixing device~~ comprising:

at least one mixing element for mixing a flow of fluid having a direction of fluid flow, the at least one mixing element comprising:

a surface having a normal which is acutely angled with respect to a first plane and a second plane which is orthogonal to the first plane, the first plane and the second plane intersecting on a line substantially parallel to the ~~the~~ direction of fluid flow.

46. (Currently Amended) A fluid radiation treatment system ~~fluid mixing device for mixing a fluid~~ having a direction of fluid flow, the system ~~device~~ comprising:

at least one mixing element to create at least one vortex adjacent to a surface downstream of the mixing element, the mixing element oriented in a manner such that a single rotation around its nearest edge to the surface causes the mixing element to become parallel to a tangent to the surface at a point nearest to the mixing element, describing

an axis of rotation that is oblique with respect to the direction of fluid flow.

47. (Currently Amended) A fluid radiation treatment system comprising a radiation source module ~~comprising~~ including the fluid mixing device defined in claim 1.

Claims 48-51. (Cancelled)